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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/774,888	02/01/2001	Jun Koyama	740756-2255	3194

22204 7590 05/14/2002

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EXAMINER

WEISS, HOWARD

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 05/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/774,888		KOYAMA ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Howard Weiss		2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 April 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 and 34-42 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 34-42 ~~is/are~~ rejected.

- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                      | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                             | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5&amp;8</u> | 6) <input type="checkbox"/> Other: _____                                    |

Art Unit: 2814

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Attorney's Docket Number: 740756-2255

Filing Date: 2/1/01

Continuing Data: none

Claimed Foreign Priority Date: 2/1/00 (JPX)

Applicant(s): Koyama et al. (Kato)

Examiner: Howard Weiss

***Election/Restrictions***

1. The Applicants' election of Group I, Claims 1 to 12 and 34 to 42, in Paper No. 7 is acknowledged. Claims 13 to 33 have been canceled

***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
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***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Initially, and with respect to Claims 1 and 3, note that a "product by process" claim is directed to the product per se, no matter how actually made. See *In re Thorpe et al.*, 227 USPQ 964 (CAFC, 1985) and the related case law cited therein which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. As stated in Thorpe,

even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); *In re Pilkington*, 411 F.2d 1345, 1348, 162 USPQ 145, 147 (CCPA 1969); *Buono v. Yankee Maid Dress Corp.*, 77 F.2d 274, 279, 26 USPQ 57, 61 (2d. Cir. 1935).

Note that Applicant has burden of proof in such cases as the above case law makes clear.

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4. Claims 1 to 12 and 34 to 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (JP 11-154714) and Akbar (U.S. Patent No. 5,656,845).

Yamazaki et al. show most aspects of the instant invention (e.g. Figures 1 and 2) including:

- a memory cell array with memory cells formed in a matrix
- each cell containing a memory thin film transistor (MTFT) **Tr1** and a switching thin film transistor (STFT) **Tr2**
- said MTFT including:
  - a first semiconductor active layer **202** formed on an insulating substrate **201** and having a first thickness **d1**
  - a first insulating film **211**, a floating gate electrode **213**, a second insulating film **214** and a control gate electrode **215**
- said STFT including:

- a second semiconductor active layer **206** formed on an insulating substrate **201** and having a second thickness **d2**
- a gate insulating layer **212** and a gate electrode **217**
- where **d1** is thinner (i.e. smaller) than **d2** and within the ranges claimed
- the memory cell array included in the devices claimed (e.g. Figure 12)

Yamazaki et al. does not show the first and second semiconductor layer continuous. Akbar teaches (e.g. Figures 1, 9 and 10) to form first and second semiconductor layers in a continuous layer **122** to provide memory cells with improved performance and reliability (Column 2 Lines 19 to 22). It would have been obvious to a person of ordinary skill in the art at the time of invention to form first and second semiconductor layers in a continuous layer as taught by Akbar in the Device of Yamazaki et al. to provide memory cells with improved performance and reliability.

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Additionally, how the transistors of the memory cells are formed, wither integrally or by some other means, relates to an intermediate process step (i.e. "product-by-process") and does not affect the final device structure.

### ***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1 to 12 and 34 to 42 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1 to 12 of copending Application No. 09/156,913 in view of Akbar. Application No. 09/156,913 claim most aspects of the instant except for the first and second semiconductor layer continuous. Akbar teaches (e.g. Figures 1, 9 and 10) to form first and second semiconductor layers in a continuous layer **122** to provide memory cells with improved performance and reliability (Column 2 Lines 19 to 22). It would have been obvious to a person of ordinary skill in the art at the time of invention to form first and second semiconductor layers in a continuous layer as taught by Akbar in the Device claimed in Application No. 09/156,913 to provide memory cells with improved performance and reliability.
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This is a provisional obviousness-type double patenting rejection.

7. Claims 1 to 12 and 34 to 42 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1 to 30 of copending Application No. 09/988,729 in view of Akbar. Application No. 09/988,729 claim most aspects of the instant except for the first and second semiconductor layer continuous. Akbar teaches (e.g. Figures 1, 9 and 10) to form first and second semiconductor layers in a continuous layer **122** to provide memory cells with improved performance and reliability (Column 2 Lines 19 to 22). It would have been obvious to a person of ordinary skill in the art at the time of invention to form first and second semiconductor layers in a continuous layer as taught by Akbar in the Device claimed in Application No. 09/988,729 to provide memory cells with improved performance and reliability.

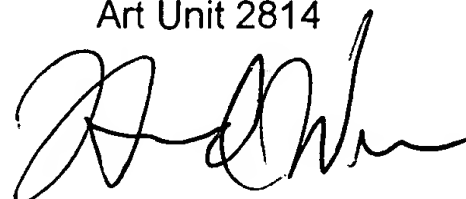
This is a provisional obviousness-type double patenting rejection.

**Conclusion**

8. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications. The official TC2800 Before-Final, **(703) 872-9318**, and After-Final, **(703) 872-9319**, Fax numbers will provide the fax sender with an auto-reply fax verifying receipt of their fax by the USPTO.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(703) 308-4840** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via **Howard.Weiss@uspto.gov**. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 Receptionist at **(703) 308-0956**.
10. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/326, 347	5/10/02
Other Documentation: PLUS Analysis Report	4/29/02
Electronic Database(s): EAST, IEL	5/10/02

Howard Weiss  
Patent Examiner  
Art Unit 2814



HW/hw  
13 May 2002